Notice of Allowability	Application No.	Applicant(s)	
	10/037,609	HEPLER ET AL.	
	Examiner	Art Unit	
	Esaw T Abraham	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amdt filed on 03/17/05*.

2. ☒ The allowed claim(s) is/are *1-39*.

3. ☒ The drawings filed on *01/02/02 and 03/17/05* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Examiner's statement for reason for allowance

The following is an examiner's statement for allowance:

1. Claims **1-39** have been allowed.

As per claim 1:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a the steps of: (a) performing the forward metric calculations in two stages, wherein a first group of the forward

metric calculations are calculated in a first stage followed by a second group of forward metric calculations being calculated in a second stage; (b) storing the metric calculations obtained in step (a) in a memory; (c) reading the forward metrics calculated during the first stage from the memory for use with reverse metric values to perform the an output calculation; (d) performing the reverse metric calculations in the second stage, following the first stage; (e) performing the a second half of forward metric calculations as said reverse calculations are being performed; and (f) storing each of the forward metric calculations performed in the first second stage into a memory location of said memory that a forward metric calculated during the first stage is being read out for use in an output calculation. Consequently, claim 1 is allowed over the prior art.

Claims **2-4,** which is/are directly or indirectly dependent/s of claim 1 are also allowable over the prior art of record.

As per claim 5:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch

metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious the steps of (a) calculating, during a first time interval, a forward metric value for each data bit and its accompanying parity bits received from a transmission location; (b) storing each forward metric value in a first memory; (c) storing each received data bit and accompanying parity bits in a local memory as they are received; (d) reading out a forward metric value from the first memory during a second time interval for calculating an extrinsic value; (e) utilizing the data bit and associated parity bits previously stored in memory for calculating a reverse: metric value during said second time interval; and (f) during said second time interval, calculating a forward metric value for data bits and associated parity bits received during the second time interval and storing each forward metric value calculated during the second time interval in a memory location of said first memory from which a forward metric value is read out during step (d). Consequently, claim 5 is allowed over the prior art.

Claims **6-14,** which is/are directly or indirectly dependent/s of claim 5 are also allowable over the prior art of record.

As per claim 15:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-

coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious the steps of (a) performing forward metric calculations in two successive time intervals wherein one group of forward metric calculations are calculated in a first time interval followed by a second time interval; (b) storing each of the forward metric calculations performed during the first interval in a memory; (c) reading each forward metric value calculated during the first time interval from said memory for use together with a reverse metric value in calculating an extrinsic value; (d) performing reverse metric calculations, during the second time interval and after completion of the forward metric calculations performed during the first time interval; and (e) writing each forward metric value calculated during the second time interval into a memory location in said

memory from which a forward metric value calculated during the first time interval is read out of memory. Consequently, claim 15 is allowed over the prior art.

As per claim 16:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious the method steps of: (a) generating a memory location in an extrinsic memory; (b) receiving signals comprising data bits and associated parity bits which may be corrupted by noise or the like; (c) storing the data bit, associated parity bits, a memory location and a starting extrinsic value;(d)

calculating a first set of forward metric values based on said data bit, associated parity bits and starting extrinsic value; (e) storing the forward metric value calculated into a forward metric memory; (f) reading the calculated forward metric value from memory for use together with a reverse metric value in calculation of an extrinsic value; (g) employing steps (a)-(c) for calculating a second set of forward metric values while the reverse metric values are being calculated; and (h) storing each of the second set of forward metric values in a memory location which is the same one in which one of the first set of forward metric values is read out for use in calculation of a reverse metric value. Consequently, claim 16 is allowed over the prior art.

Claim **17,** which is/are directly or indirectly dependent/s of claim 16 are also allowable over the prior art of record.

As per claim 18:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric,

and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious steps of: (a) receiving signals comprising data bits each having associated parity bits, which signals may be corrupted by noise or the like; (b) generating a memory location in an extrinsic memory for storing an extrinsic value; (c) storing a first data bit, associated parity bits, memory location and a starting extrinsic value in a first memory; (d) calculating a first forward metric value based on said data bit, associated parity bits and starting extrinsic value; (e) storing the forward metric value calculated in a forward metric memory; (f) reading the calculated forward metric value from the forward metric memory for use together with a reverse metric in calculating an extrinsic value; (g) employing steps (a) - (c) for calculating a first forward metric value of a second set of forward metric values while the reverse metric value is being calculated; and (h) storing the first forward metric value of the second set of forward metric values in the same memory location as one in which one of the first set of forward metric values is read out for use in calculation of an extrinsic value. Consequently, claim 18 is allowed over the prior art.

As per claim 19:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch

metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious an extrinsic memory; first means for generating a memory location in the extrinsic memory; second means for receiving signals comprising data bits each having associated parity bits which may be corrupted by noise or the like; third means for storing the data bit, associated parity bits and memory location; fourth means for calculating a first set of forward metric values based on said data bit, associated parity bits and an initial starting extrinsic value; fifth means for storing the forward metric calculated in a forward metric memory; sixth means for reading the calculated forward metric from said forward metric memory for use, together with a reverse metric, in calculating an extrinsic value; said first, second and third means calculating a second set of forward metric values while the reverse metric values are being calculated; and said fifth means including means for storing one of the second set of forward metric values in the same memory

location of the forward metric memory as one in which one of the first set of forward metric values is read out for use in calculation of an extrinsic value. Consequently, claim 19 is allowed over the prior art.

As per claim 20:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious the steps of (a) storing a first group of forward metric values in said memory in a given order; (b) reading out stored metric values in an order of last calculated to first calculated; and (c) storing a second

group of forward metric values in a given order, whereby a first calculated forward metric value of said second group is stored in a memory location from which the last calculated metric value of said second group is read out. Consequently, claim 20 is allowed over the prior art.

Claim **21,** which is/are directly or indirectly dependent/s of claim 20 are also allowable over the prior art of record.

As per claim 22:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a first memory

for storing a data bit and associated parity bits; a forward metric memory; means for calculating a first group of forward metric values based on said data bit and associated parity bits; means for storing said first group of forward metric values in said memory in a given order; means for reading out the first group of stored metric values from said memory in an order of last calculated to first calculated means for controlling said means for calculating to calculate a second group of forward metric values following calculation of said first group of metric values; and means for storing the second group of forward metric values in a given order in said forward metric memory, whereby a first calculated forward metric value of said second group is stored in a memory location in which the last calculated metric value of said first group is read out. Consequently, claim 22 is allowed over the prior art.

Claim **23,** which is/are directly or indirectly dependent/s of claim 22 are also allowable over the prior art of record.

As per claim 24:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating

backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious for performing an output calculation to determine binary states of received signals, comprising the steps of: (a) performing the reverse metric calculations in two stages, wherein one group of reverse metric calculations are calculated in a first stage followed by a second group of reverse metric calculations being calculated in a second stage; (b) storing each of the reverse metric calculations performed in the first stage; (c) reading the reverse metric values calculated during the first stage from memory for use in the output calculation; (d) performing the forward metric calculations after completion of the first stage of reverse metric calculations and before the second stage of reverse metric calculations; and (e) writing each reverse metric calculated during the second stage into a memory location that a reverse metric calculated during the first stage is being read out for use in an output calculation. Consequently, claim 24 is allowed over the prior art.

Claims **25-27,** which is/are directly or indirectly dependent/s of claim 24 are also allowable over the prior art of record.

As per claim 28:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-

coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious the steps of (a) calculating, during a first time interval, a reverse metric value for each data bit and its accompanying parity bits received from a transmission location; (b) storing each reverse metric value in a first memory; (c) storing each received data bit and accompanying parity bits in a local memory as they are received; (d) reading out a reverse metric value from the first memory for use in calculating an extrinsic value; (e) utilizing the data bit and associated parity bits previously stored in the local memory for calculating a forward metric value; and (f) during a second time interval, calculating a reverse metric value for data bits and associated parity bits received during the second time interval and storing each reverse metric value calculated during

the second time interval in a memory location of the first memory in which a reverse metric value is read out during step (d). Consequently, claim 28 is allowed over the prior art.

Claims **29-31,** which is/are directly or indirectly dependent/s of claim 28 are also allowable over the prior art of record.

As per claim 32:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a decoding method (a) performing a first group of forward metric calculations during a first stage; (b)

storing the first group of forward metric values in a memory; (c) performing reverse metric calculations during a second stage following said first stage; (d) performing a second group of forward metric calculations as reverse metric values are calculated during the second stage; (e) reading forward metric values of said first group out of locations in memory for use with the reverse metric values calculated during said second stage for performing calculations to determine binary states of said received signals; and (f) storing calculations of said second group of forward metric values during a time that the reverse metric values are being calculated in the second stage, whereby each forward metric value calculated during the second stage is stored in the same location that a forward metric value calculated during the first stage is being read out for use in performing calculations to determine binary states of said received signals. Consequently, claim 32 is allowed over the prior art.

As per claim 33:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch

metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious Consequently, means for performing the reverse metric calculations in two stages, wherein one group of reverse metric calculations are calculated in a first stage followed by a second group of reverse metric calculations being calculated in a second stage; means for storing each of the reverse metric calculations performed in the first stage; means for reading the reverse metric values calculated during the first stage from memory for use in the output calculation; means for performing the forward metric calculations after completion of the first stage of reverse metric calculations and before the second stage of reverse metric calculations; and means for writing each reverse metric calculated during the second stage into a memory location that a reverse metric calculated during the first stage is being read out for use in an output calculation. Consequently, claim 33 is allowed over the prior art.

Claims **34 and 35,** which is/are directly or indirectly dependent/s of claim 33 are also allowable over the prior art of record.

As per claim 36:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-

15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious means for calculating, during a first time interval, a reverse metric value for each data bit and its accompanying parity bits received from a transmission location; a first memory for storing each reverse metric value; a local memory for storing each received data bit and accompanying parity bits; means for reading out a reverse metric value from the first memory for use in calculating an extrinsic value; means for utilizing the data bit and associated parity bits previously stored in the local memory for calculating a forward metric; and means, during a second time interval, for calculating a reverse metric value for data bits and associated parity bits received during the second time interval and storing each reverse metric value calculated during the second time

interval in a memory location of the first memory in which a reverse metric value is read out during step (d). Consequently, claim 36 is allowed over the prior art.

Claims **37 and 38,** which is/are directly or indirectly dependent/s of claim 36 are also allowable over the prior art of record.

As per claim 39:

The prior art of record, Nakamura et al. (U.S. PN: 6,757,865) teach a turbo-code error correction decoding method for decoding a coded sequence which has been submitted to turbo-coding in a wireless communication device or other communication fields (see col. 1, lines 1-15). Further, Nakamura et al. teach a turbo-code error correcting decoder comprising branch metric calculating means for calculating a branch metric for a transition from time point t-1 to time point t, branch metric storing means for storing the branch metric, forward path metric calculating means for calculating a forward path metric at the time point t-1 after reading out the branch metric from the branch metric storing means, forward path metric storing means for storing the forward path metric, backward path metric calculating means for calculating backward path metric at the time point t after reading out the branch metric from the branch metric storing means, backward path metric storing means for storing the backward path metric, and soft decision information calculating means for calculating soft decision information after reading out the branch metric from the branch metric storing means, reading out the forward path metric from the forward path metric storing means, and reading out the backward path metric from the backward path metric storing means (see col. 3, lines 37-45). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious means for performing a first group of forward metric calculations during a first stage; memory means for

storing the first group of forward metric values; means for performing reverse metric calculations during a second stage following said first stage; means for performing a second group of forward metric calculations as reverse metric values are calculated during the second stage; means for reading forward metric values of said first group out of locations in said memory means for use with the reverse metric values calculated during said second stage for performing calculations to determine binary states of said received signals; and means for storing calculations of said second group of forward metric values during a time that the reverse metric values are being calculated in the second stage, whereby each forward metric value calculated during the second stage is stored in the same location in said memory means that a forward metric value calculated during the first stage is being read out for use in performing calculations to determine binary states of said received signals. Consequently, claim 39 is allowed over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

2. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Esaw Abraham

Esaw Abraham

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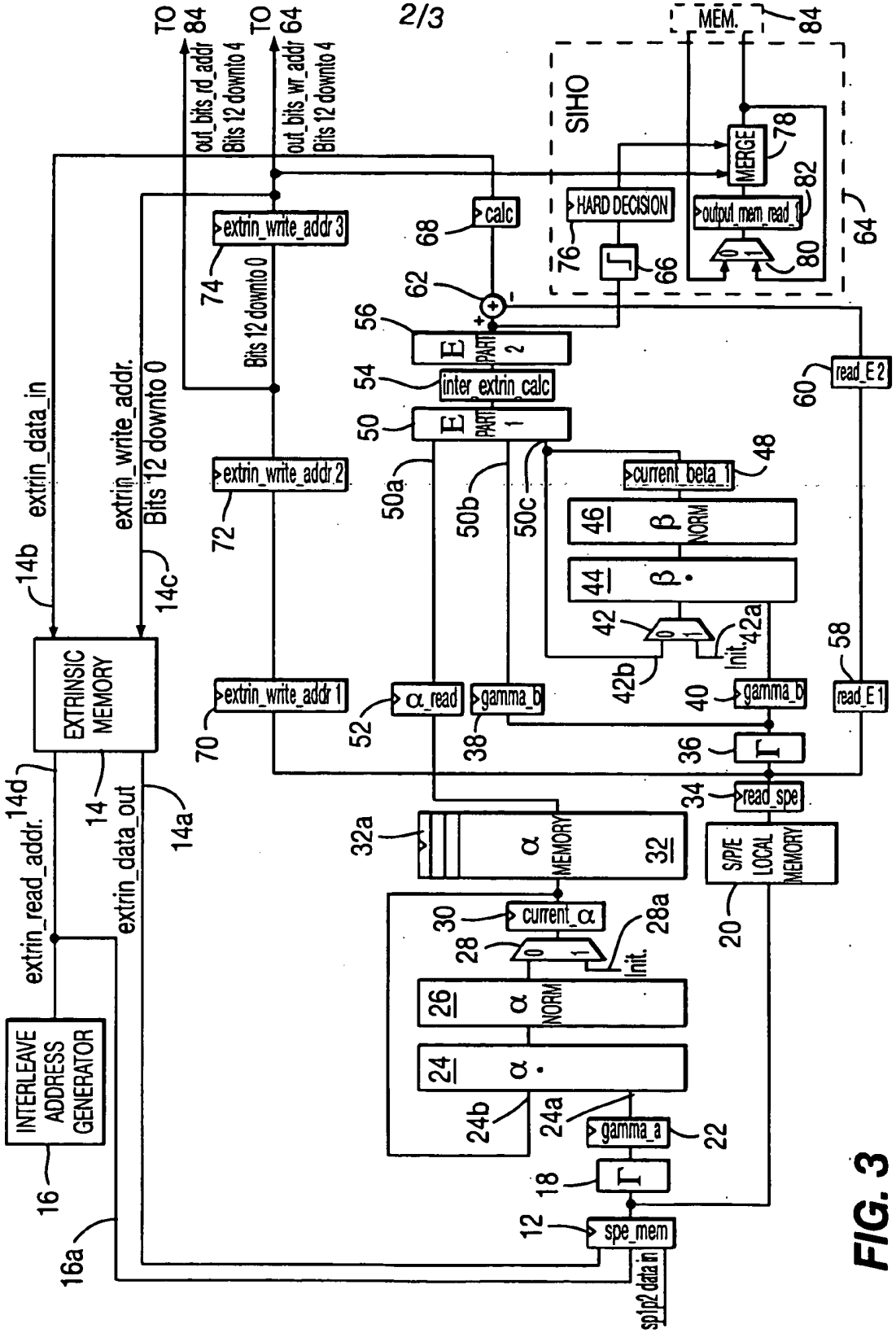

FIG. 3